Infor LN Service User Guide for Call Management

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About this document

This guide provides information about the various Call Management processes available, and the procedure to create and process calls.

Objectives

This document is designed to meet the following objectives:

- Master data setup
- Call handling
- Call diagnostics

This document assumes that you already have a general understanding of LN Financials.

Document summary

This document describes the various Call Management processes available, and the procedure to create and process calls.

How to read this document

This document is assembled from online Help topics. As a result, references to other sections in the manual are presented as shown in the following example:

To locate the referred section, refer to the Table of Contents.

Underlined terms indicate a link to a glossary definition. If you view this document online, you can click the underlined text to proceed to the glossary definition of the term.

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Chapter 1
Introduction

1

Call Management (CLM) is the customer's primary link into the service environment. In Call Management, you can register and further handle calls related to products. You can be alerted about existing calls on the selected business partner at the time of registration. The concept of a central call center with several local call centers can be supported taking into account the various time zones. The registered calls can be assigned to any support center or support engineer. When assigned to a specific support engineer, the call enters the individual's queue. Subsequently, the call can be taken up for processing.

Calls can also be assigned to a business partner (subcontractor), for which e-mail is used as a carrier to transfer the call. This e-mail message contains an attachment that contains all relevant call information.

The service organization can agree to specific response times while signing contracts with the customers. Response times could be based on a specific time period or based on specific business days. To honor a possible agreed warranty or contract condition, the call is dispatched to a service center (and service engineer) for field service, to the help desk for support, or to a workshop for depot repair through an RMA order.

The status of the call provides insight into what is done so far and what can be expected further. The status can have values such as Registered and Assigned. Each call has a response time that is controlled.

Calls can escalate if they are not solved within the agreed time frame. In addition, logging what is done and by whom is carried out automatically. This feature enables you to trace and track calls from the start until the end.

Chapter 2
Call Management Concepts

2

This chapter provides a brief description of the concepts of the Call Management module.

Call handling concepts

You can use Call Management to carry out the entire call handling process, which includes:

- Call receipt
- Call logging
- Call dispatching
- Call diagnosis
- Call solving
- Call Invoicing
- Supervisor / unblocking

Service enables either a single service concept (SSC) or a dual service concept (DSC) for the service organization.

Before you can work with the Call Management modules, you must first define the following information:

Prerequisites:

- Configurations (in CFG)
- Items used (in MDM)
- Service organization (in MDM)

You must then set the parameters in the Master Data - Call Management Business Object, as described in Chapter 3.

Single service concept (SSC)

In a single service concept, the process consists of the following steps:

1. Enter call details.
2. Process the call.

3. Start the call timer. This enforces time limits to the solution of the call.
4. Use diagnostics to establish the problem.
5. Enter problem and solution details.
6. Invoice the business partner.

Dual service concept (DSC)

In a dual service concept, the process consists of the following steps. Note that the helpdesk performs Steps 1 and 2, and the assignee performs Steps 3 and onwards.

1. Enter the call details.
2. Assign the call to the relevant service center or support engineer.
3. Reassign the call, if wrongly assigned.
4. Process the call.
5. Start the call timer, which enforces time limits to the solution of the call.
6. Use diagnostics to establish the problem.
7. Enter problem and solution details.
8. Invoice the business partner.

Call Handling

Calls are handled on a time-based priority scheme. The coordination between demand and the processing of calls (problems) takes place through the escalation procedure. LN enables you to monitor the status of calls easily, which also enables you to make early decisions on whether extra or special support is required to solve a problem.

The Call Handling sessions are used from the initial entry of call details until the business partner accepts the problem solution.

The call handling process utilizes data entered in the Master Data sessions throughout the life of a problem call.

The efficiency of call handling is a critical success factor for service organizations. When call handling takes place, issues that influence the efficiency include:

- The time taken to enter the call details, and the ability to view previous calls.
- The experience of the support engineers in analyzing the problem, whether as individuals, or as provided by a diagnostic tree of questions and their expected answers.
- The ease of monitoring the call handling process, with an associated escalation procedure if the problem is not solved quickly enough.

Response time

Response times are used to calculate the initial and actual priorities of a call and planned dates.

You can link response times to terms and coverage terms of the following
- Service contracts
- Service contract templates
- Service contract quotations
- Warranties
- Service order activities
- Call parameters
- Business partners

The response time is the maximum elapsed time between the registration of the call and the response. Response times cannot be registered manually. To determine what response time is used, LN considers the service contracts, the general information for this specific business partner, and the corresponding Call Parameters (tsclm0100m000) parameter.

The Call Management module uses response times in the following way:

When you register a call, LN allocates a response time to the call by the following search path:

1. If the call's Installation group, or item, is covered by a service contract, the call's response time is the response time defined for the service contract.
2. If no service contract is defined for the call (or no response time defined for the service contract), LN allocates the response time code defined for the call's sold-to business partner.
3. If no response time code is defined for the call's sold-to business partner, LN allocates the response time code defined in the Call Parameters (tsclm0100m000) session.

LN calculates the various response time of a call as follows:
- Reaction time = registration time + response period
- Solution start time = registration time + solution start period
- Solution finish time = registration time + solution finish period

Note

- If the **Use Priorities in Reaction Time Calculation** check box is selected in the Call Parameters (tsclm0100m000) session, any priority defined for a call will affect (decrease) the response time, solution start time, and solution finish time.
- LN uses the call's solution times to determine the call priority. For details, refer to Call priority.

Assign and reassign call

You can assign calls to a service center or to a support engineer. In the Reassign Calls between Support Engineers (tsclm1220m000) session, you can view the calls that are assigned to service centers and assign these calls to support engineers. Particular call details, such as the configuration and the priorities, appear in this session. All the calls that are assigned to a specific service center, and that are not yet assigned to a support engineer, appear in this session. If both the service center and the support engineer are allocated, the call status changes to Assigned.

Use the Reassign Calls between Support Departments (tsclm1215m000) session to assign a call to a specific service center. You can also specify the support engineer in this session. If the call is assigned to the service center and service engineer, the status of the call changes from **Registered** to **Assigned**.

Use the Reassign Calls between Support Engineers (tsclm1220m000) session to assign a call to a specific support engineer. To assist you in this process, the session lists call details such as the configuration, required activity, and priorities. If both the service center and the support engineer are allocated, the call status changes to Assigned.

Reassign Call

If a call cannot be resolved, the call is reassigned. You can reassign the call to another service center or another support engineer. Most organizations choose to reassign the call before sending out a service engineer. This practice saves the organization time, and saves the customer money. You can reassign calls between service centers from the Call (tsclm1100m000) session, or from the Reassign Calls between Support Departments (tsclm1215m000) session, in which you can change calls based on a range of factors.

Use the Reassign Calls between Support Departments (tsclm1215m000) session to reassign a range of calls to another service center. The status of the call before transfer must be **Registered**, **Assigned**, or **In Process**. The resulting status of the call depends on the number of employees at the reassigned service center:

- For calls with only one employee, the status change to **Assigned**.
- For calls with multiple employees, the status changes to **Registered**.

Use the Reassign Calls between Support Engineers (tsclm1220m000) session to reassign a range of calls to another support engineer. This engineer can work for another service center. The status of the call before transfer must be **Assigned** or **In Process**. After transfer, the call status changes to **Assigned**.

Diagnostic tree construction

A diagnostic tree is an important function in the Call Management (CLM) module and is an information structure that contains a set of questions, along with their expected answers (of which there can be more than one), that is used to help you solve problems. The expected problem and the expected solution can be attached to an answer. A follow-up question can also be attached, which is used to elicit more details before indicating what the expected problem and solution are. You can also specify an item related to the answer, which enables you to switch to the diagnostic tree of the related item, and search the diagnostic tree's path for a solution.

To construct a diagnostic tree

This feature enables you to analyze registered problem calls in a structured way. Diagnostic trees help calltakers to analyze malfunctions or problems, solve the problems remotely, and prevent unnecessary location visits. LN determines the diagnostic tree to be used, based on the registered object or model. To use the diagnosis, you must set up the structure.

Priorities

Call priority is determined by the available time to solve the call, or the available time to start to solve the call, depending on the **Use Priorities in Reaction Time Calculation** setting in the Call Parameters (tsclm0100s000) session.

The time left to solve a call and the response time determine the call priority.

In Infor LN, you can assign a priority to:

- Installation group: In the Installation Groups (tsbsc1100m000) session
- Serialized item: In the Serialized Items (tscfg2100m000) session
- Business partner: In the Sold-to Business Partner (tccom4110s000) session
- Problem: In the Call (tsclm1100m000) session
- Bad fix: In the Call Parameters (tsclm0100m000) session.

In the Call Management module, if a call has any of these priorities assigned, and if the **Use Priorities in Reaction Time Calculation** check box is selected in the Call Parameters (tsclm0100m000) session, the call's response times are affected in the following way:

Priority Factor

From each priority, you can calculate a priority factor by the following equation:

```
priority factor = priority / 100
```

Example

```
Installation group priority factor = Installation group priority / 100
```

The call's priority factor

To determine the call's priority factor, multiply all priorities as follows:

```
call priority = (Installation group priority / 100) or (serialized item
priority / 100) * (BP priority / 100) * (problem priority / 100) * (bad fix
 priority / 100)
```

Note

- A priority of zero (0) signifies that the particular priority is irrelevant and left out of the equation.
- The bad fix priority is only used if the call is considered a bad fix.

The reaction time and solution time

The call's priority factor and response time data determine the reaction and solution times for the call by the following formulae:

```
reaction time = reported time + (reaction period * priority factor)
solution start time = reported time + (solution start period * priority
factor)
solution finish time = reported time + (solution finish period * priority
factor)
```

Example

A call is registered at 10 AM on Wednesday. The solution coverage calendar is 9 PM to 5 PM Monday through Friday. The solution start period (of the call's response time) is 21 hours, and the following priorities are defined for the call:

- Problem priority = 50
- Item priority = 80

The total priority factor is: (50/100) x (80/100) = 0.5 x 0.8 = 0.40

The solution start time, therefore, is: 10 am + (21 x 0.40) = 10 am + 8.4 hours

As a result, the solution to the call's problem must be started no later than 10:24 AM on Thursday.

Sorting on priority

If the customer want to use only problem priority, the business partner priority and the serialized item priority must be set to zero which is the lowest possible priority.

Note

The priority must be set between zero (0) to ninety nine (99). By default, zero is set as the lowest priority. If you want to set ninety nine (99) as the lowest priority, you must define ninety nine (99) as the default priority in the Call Parameters (tsclm0100m000) session.

Escalated and deferred calls

Escalated calls

The term *escalated calls* refers to all calls that must be processed to avoid escalation. This concept of escalated calls enables you to list the calls in order of their actual escalation priority. Escalated calls are neither special, nor are the calls escalated for a specific reason.

Escalated calls are calls that must be dealt with, remain to be assigned, or for which the assigned person is yet to handle the call in process. Blocked calls and waiting calls cannot be defined as escalated calls, because these calls cannot be handled.

Therefore, a call is escalated if the call is:

- **Registered**
- **Assigned**

Escalated calls are listed in order of priority, which is determined by the available time to solve the call, or the available time to start to solve the call, which depends on the **Priority Definition** parameter defined in the Call Parameters (tsclm0100m000) session.

Deferred calls

Deferred calls are calls that must be handled, and for which the status does not change within the specified period. A registered call, for example, is not set to **Assigned** status in time or an assigned call is not set to **In Process** status in time. The **Time Fence** parameter in the Call Parameters (tsclm0100m000) session determines the period for status change.

The time fence is used in two ways:

- The time fence added to the time at which the call is registered indicates when the call must be assigned.
- The time fence added to the time at which the call is assigned indicates when the call must be in process.

In other words, a call is deferred if:

- The call is registered and the current time is past the registration time plus time fence.
- The call is assigned and the current time is past the assigned time plus time fence. The call is not blocked.

Note

In contrast to escalated calls, deferred calls also include waiting calls, because calls that are waiting and have passed the time fence must be brought to the attention of the help desk employee.

To view escalated calls and deferred calls

You can activate a filter through which you can list both escalated and the deferred calls. However, if you have ten escalated calls and ten deferred calls, this does not imply that the list consists of twenty calls, because calls can be escalated and deferred at a given time. This condition applies to calls that have passed the time fence and that are not **Waiting**.

Note

- When a call is blocked, the call is not listed by any of the three possible filters for further processing, because a blocked call is not the responsibility of the help desk. A call is blocked for financial causes, and must, therefore, be addressed by someone other than the help desk manager.
- You cannot view a call that is overdue. However, overdue calls that have not been processed are also deferred calls. In other words, the **Deferred Emergency Calls** filter enables you to list the subset of the overdue calls. Similarly, you can use the **Escalated Calls** filter to list calls that are overdue, deferred, and not waiting.

To create a physical breakdown from a Bill of Materials

You can use the Create Physical Breakdown Structure (tscfg2210m000) session to create the physical breakdown from a Bill of Material (BOM).

If you create a physical breakdown from a bill of material, this results in a direct copy of effective items present in the Bill of Material (tibom1110m000) session of LN Manufacturing to the Serialized Items (tscfg2100m000) session of LN Service. If no item service data is present, LN uses the item service defaults maintained for item type and item group to create items in Service.

To create a physical breakdown from a Bill of Materials

1. Start the Create Physical Breakdown Structure (tscfg2210m000) session.
2. In the **Source** field, select **Bill of Material**.
3. Use the **Deliveries** option to create a physical breakdown from Sales (after sales). The end item of the sales order, the production BOM is copied to a physical breakdown. If you select this check box, you can use the fields in the **Selection Range** group box to create a physical breakdown from a range of installation group, items, or serialized items. For this selection range, a physical breakdown is created.
4. If you select the **Check Effectivity** check box, the items' validity is checked before the items are copied to physical breakdown.

LN validates the following:

If the item is revision controlled and derived from sales deliveries, LN checks for revision from the sales order line. LN checks for the effective date from engineering items for the given item and revision.

If the item is not revision controlled and derived from sales deliveries, LN checks for the effective date from sales based on the Configuration Date in Sales field.

If the item is not from sales deliveries then, LN takes the effective date given as input.

- Unit Effectivity: When LN creates the physical breakdown structure from a Bill of Material (BOM), LN considers unit effectivity as a validation. The items that belong to the unit effectivity are only created in service. Unit effectivity is checked from the serialized item. If unit effectivity is not present in the serialized item, LN checks the unit effectivity from a sales order line if the item originates from sales.
- Fall back on Bill Of Material if source is not found: If you select this check box when you create the physical breakdown structure from an as-built structure or item breakdown and no source item is found, LN copies the bill of material of that item to the physical breakdown structure.
- Consistency checks: If the physical breakdown is generated directly from a production BOM, LN performs a consistency check, both at LN Manufacturing and LN Service, to ensure the structure is defined without any mismatch. The items in such a structure must be defined in LN Service with appropriate service-item data with related configuration control, and checked for consistency.

LN performs the following consistency checks:

To distinguish between the items relevant and not relevant to service, LN copies the configuration-controlled items, namely serialized or anonymous items, into physical breakdown. If no service-item data is available for an item, based on service defaults, the item data will be created in items service and copied to physical breakdown.

Note

You must create service item data for all the items copied from a production bill of material to the physical breakdown structure.

LN checks for consistency with respect to the structure formation. A serialized item must always be situated above an anonymous item to ensure that the structure remains consistent with the item definition. LN begins to copy when inconsistency is detected in the structure formation and an error report is generated.

LN prints an error report if a serialized item is present under an anonymous item, as illustrated in the following example:

Example

Level	Item	Conf. Control	Item Service Data Present
0	X	Serialized	Yes
1	Y	Anonymous	Yes
2	A	Serialized	Yes ------- Problem 1
2	B	None	No
1	Z	Anonymous	Yes
2	A	Serialized	Yes ------- Problem 2
3	B	None	No
4	C	Anonymous	Yes ------- Problem 3

All three problems are caused by serialized items present under anonymous items.

LN prints the following error report:

No PBD was generated for item X for the following reasons:

- Parent item (Y-anonymous) has a lower configuration control setup than Child item (A-serialized).
- Parent item (Z-anonymous) has a lower configuration control setup than Child item (A-serialized).
- Parent item (B-none) has a lower configuration control setup than Child item (C-anonymous).

LN checks for consistency with respect to the loops in the bill of material (BOM). If two anonymous items occur in an opposite fashion, with respect to an existing structure definition, the anonymous items can subsequently end up in a loop.

LN detects a loop in a bill of material, LN prints an error report, as illustrated in the following example:

Example

Level	Item	Conf. Control	Item Service Data Present
0	X	Serialized	Yes
1	Y	Serialized	Yes
2	A	Serialized	Yes
2	B	Serialized	Yes
1	Z	Serialized	Yes
2	A	Serialized	Yes
3	B	Serialized	Yes
4	X	Serialized	Yes ------- Problem 1

LN prints the following error report:

For item X, no PBD could be generated for the following reasons:

- Cycle detected in BOM.

Call Status

The call status helps you to keep track of a call and to determine the next action. The sequence of the call status is strictly regulated. The call status is checked before a step is carried out. After you perform particular steps, the status is updated automatically.

If, for example, you add a new a call, the call’s status will be **Registered**. The status changes as follow-up activities occur.

LN uses the status to determine the following:

- At what stage of the call handling process a support engineer is working on the problem
- Whether a service engineer is required
- Whether the business partner has accepted the actual solution provided

A call can have the following statuses:

- **Registered**: The call taker has registered the call.
- **Assigned**: The call has been assigned to a service engineer.
- **In Process**: The service engineer has started to solve the call.
- **Solved**: The service engineer has solved the call.
- **Transferred**: The call has been transferred from Call Management to Service Order Control.
- **Accepted**: The customer has accepted the solution provided.

Chapter 3
Master Data Setup

3

To set up Master Data for Call Management

The call handling process uses data defined in Call Management data setup throughout the life cycle of the call. Call Management master data enables you to define the fixed data, such as response times, call groups, priority time scales, invoicing intervals, and specific call parameters.

To set up master data

To set up Call Management Master Data, take the following steps:

1. Define the call parameters.
   In the Call Parameters (tsclm0100m000) session, you can set parameters to do the following:
   - Delete the transaction log after accepting a call.
   - Match service order numbers. When you generate a service order for a call, the service order number matches the call number from which the service order is generated.
   - Match maintenance sales order numbers. If you generate a maintenance sales order for a call, the maintenance order number matches the call number from which the order number is generated.
   - Define the invoice intervals and coverage types.
   - Define response time for all calls in the Call Management module that are not covered under any contract, or whose sold-to business partner does not have a default response time.
   - Indicate whether the solution start period or the solution finish period must be considered in time calculations at the service-order level. You can also use this setting to calculate the actual time left to solve a call.
   - Use priorities with the call response times to calculate reaction times, solution start times, and solution finish times.
   - Signal and block calls if the credit limit is exceeded, if the credit review is overdue, if the invoice is overdue, of if the business partner is doubtful of invoice-to business partner.

   - Notify the user of the existing calls for the sold-to business partner, Installation group, or serialized item. When you register a new call, LN notifies the user of the calls registered previously for the sold-to business partner, Installation group, or serialized item.

2. Use the Response Types (tsclm0120m000) session to maintain response times. The Call Management module uses response times in the following way:
   When you register a call, LN allocates a response time to the call by the following search criteria:
   - If the Installation group or item defined for the call is covered by a service contract, the call's response time is the response time defined for the service contract.
   - If no service contract is defined for the call, or if no response time is defined for the service contract, LN allocates the response time code defined for the call's sold-to business partner.
   - If no response time code is defined for the call's sold-to business partner, LN allocates the response time code defined in the Call Parameters (tsclm0100m000) session.
3. Use the Priority Time Scale (tsclm0124m000) session to specify a range of time periods. LN uses these time periods to determine the initial priority and the actual priority of a call in the Call (tsclm1100m000) session. The priority of a call is determined by the specified time period in which the call's initial time to solution and actual time to solution fall.
4. Use the Call Groups (tsclm0150m000) session to view and define call groups.
5. Use the Invoicing Intervals (tsclm0170m000) session to define and maintain invoicing intervals. Time intervals for invoicing are used in Service to determine which proportion, if any, of time that is spent resolving calls is finally invoiced to the business partner.

Chapter 4
Call Management Procedures

4

This chapter provides a detailed explanation about the Call Handling processes.

Call handling

The call handling process consists of the following steps, each of which is described subsequently:

1. The call taker registers the call. The call status is then changed to **Registered** by LN.
2. The call taker assigns the call to a support engineer, if the call taker and the support engineer are not the same person. The call status is changed to **Assigned** by LN.
3. The support engineer starts to process the call. The call status is changed to **In Process** by LN.
4. The support engineer analyses and solves the problem, and sets the status of the call to **Solved**.
5. If the support engineer is unable to solve the problem, the call can be reassigned to another support department or support engineer.
6. If the customer accepts the provided solution, the call taker or the support engineer sets the call status to **Accepted**.

1. **Register the call**
   Enter the details of the customer, item, and the problem in the Call (tsclm1100m000) session.

   If any of the blocking reasons selected in the Call Parameters (tsclm0100m000) session apply to the customer, a message is displayed. If registration of the call is blocked, the call taker must inform the customer of the blocking reason so that the customer can resolve the blocking reason.

   After you register the call details, the call status is set to **Registered** by LN.

   If you also act as the support engineer, process the call as described in Step 5.

2. **Assign the call**
   Use the Assign Calls (tsclm1513m000) session to assign the call. Based on the priority of the call, assign the calls to a support engineer to solve or to a service engineer if the call is an

emergency call. Transfer the call to the field service engineer if the problem must be addressed in the field.

If you allocate both the service center and the support engineer, the call status is set to **Assigned** by LN.

3. **Process the call**
   Set the call status to **In Process** when you start to investigate the call. Before you attempt to solve the call, you can set the timer to On.
4. **Solve the call**
   After you solve the problem, the call status is set to **Solved** by LN. A value is specified in the **Actual Problem** and **Actual Solution** fields of the Call (tsclm1100m000) session before the call status is set to **Solved** by LN.
5. **Deliver the solution**
   Set the call status to **Accepted** if the customer is satisfied with the solution the call center provides.

If the support engineer cannot solve the call, or if the call center cannot handle the type of call, you can reassign the call or transfer the call to a different department.

To reassign the call

If the support engineer cannot solve the call, you can reassign the call to a different support department or a different support engineer.

To reassign calls, use one of the following sessions:

- Reassign Calls between Support Departments (tsclm1215m000)
- Reassign Calls between Support Engineers (tsclm1220m000)

To transfer the call to Service Order Control

- If a field service activity is required, you can transfer the call to Service Order Control, or immediately plan the work in Service Order Control if the visit is urgent.
- To transfer a call to Service Order Control, in the Call (tsclm1100m000) session, on the **Transfer to Service Order** menu, click **Transfer to Service Order**. LN changes the call status from **In Process** to **Transferred**.

To transfer a call to subcontractor

- If the item is covered by a subcontract agreement, LN displays the subcontract agreement information when you register the call.
- Depending on the status specified in the subcontract agreement, you can decide to transfer the call to the subcontractor.
- To transfer a call to a subcontractor, in the Call (tsclm1100m000) session, on the **Transfer to Service Order** menu, click **Subcontractor**.

To transfer a call to Maintenance Sales Order Control

In some situations, you can transfer the call to Maintenance Sales Order Control.

A maintenance sales order is required in some of the following situations:

- The customer needs some spare parts and calls the call center with this request.
- The customer has a problem with the items and wants to send the items to the depot for repair. The customer requires a replacement item or loan item to use and return after receiving the repaired original item.

To transfer a call to Maintenance Sales Control, in the Call (tsclm1100m000) session, on the **Transfer to Service Order** menu, click **Transfer to Maintenance Sales Order**.

To create the maintenance sales orders, use any of the following options:

- **Part Maintenance**
- **Part Delivery**
- **Part Receipt**
- **Part Loan**

Register call

The process to register a call includes the following activities:

- Define a call.
- Find the best response periods and invoice interval.
- Determine the priority of the call.
- Calculate various dates and times.
- Check the blocking reasons for the, call if any.

Use the Call (tsclm1100m000) session to register new calls and to process call details, which include general data, business partner data, routing data, and diagnosis data.

To register a call, run the Call (tsclm1100m000) session and enter the following details:

1. Enter the sold-to business partner. If you register a new call, LN notifies you of the calls registered previously for the specific sold-to business partner, Installation group, or serialized item. LN specifies the calls that are completed, in process, or registered by other call takers with the customer. To control the search for existing calls, you can set the **Search Based on** parameters in the Call Parameters (tsclm0100m000) session.
2. LN checks for blocking of the sold-to BP on the basis of blocking parameter set in the Call Parameters (tsclm0100m000) session.
3. Enter the Installation group for which the call is raised.
4. Enter the item code for which the call is registered.

5. Enter the serial number of the item for which the call is raised. You can select this serial number from the Serialized Items (tscfg2100m000) session, which includes other details such as the item code and description, Installation group, business partner, and item grouping. *You can only select a serialized item of the selected Installation group.*
6. If the call solving costs are covered by a service contract or warranty, LN displays a message to inform you.
7. In the **Description** field, enter a brief description of the problem reported by the customer. You can add further details in the **Comment** field.
8. In the **Reported Problem** field, you can enter a problem code. If the symptoms are caused by a known, defined problem, you can select the problem from the Problems (tsclm3130m000) session.
9. Enter the call group. You can define call groups in the Call Groups (tsclm0150m000) session.
10. You can select the **Emergency** check box and/or the **Bad Fix** check box, as applicable.
11. Enter the invoice details, such as the invoice-to business partner and the invoice interval. LN fetches the invoice interval defined for the sold-to business partner in the Call Parameters (tsclm0100m000) session or you can select the invoice interval in the Invoicing Intervals (tsclm0170m000) session.
12. If the call is transferred to Service Order Control, you must enter the support department and the support engineer details.
13. Click Save to register the call. LN generates a call number for the registered call and changes the call status to **Registered**.

Transfer call

You can transfer a call, for example, for the following reasons:

- **The call requires field engineer service**
  The call taker enters the details of the service department to which the call must be transferred and generates a service order to transfer the call to Service Order Control.
- **The call must be handled by a subcontractor**
  If the call center signed a contract with a subcontractor to provide service to the given item, the call taker views the details of the subcontract agreement and informs the subcontractor of the call details, such as the item, location address, and the problem, either by phone, fax, or email.
- **The call requires depot repair or shop maintenance**
  The call taker transfers the call to the Maintenance Sales Control in which a maintenance sales order is created with the details of the call.

To transfer a call to Service Order Control

To transfer a call to Service Order Control, take the following steps:

1. Register the call in the Call (tsclm1100m000) session. Check if the call must be transferred to Service Order Control. If a service engineer is required, you can transfer the call to Service Order Control, or immediately plan the work in Service Order Control.
2. If the call must be transferred to Service Order Control, in the Call (tsclm1100m000) session, on the **Routing** tab, enter **Service Office**.
3. If the call is marked as an emergency, specify a value in the **Service Engineer** field on the **Routing** tab in the Call (tsclm1100m000) session.
4. Transfer the call to Service Order Control. In the Call (tsclm1100m000) session, on appropriate menu, click **Transfer to Service Order** to transfer the call to Service Order Control.
5. If you transfer a call to Service Order Control, the call status is changed from **In Process** to **Transferred**.

To transfer a call to Maintenance Sales Order Control

To transfer a call to Maintenance Sales Order Control, take the following steps:

1. Register the call in the Call (tsclm1100m000) session.
2. Check if the call must be transferred to Maintenance Sales Order Control. A maintenance sales order is required in the following cases:
   - The customer needs spare parts and calls the call center to meet the request.
   - The customer has a problem with the items and wants to send the items to the depot for repair. The customer requires a replacement item or loan item to use and return after they receive the repaired original item.
3. In the Call (tsclm1100m000) session, on the **Routing** tab, enter the **Service Engineer** and the **Service Office**.
4. To transfer the call to Maintenance Sales Order Control, in the Call (tsclm1100m000) session, on the Specific menu, click **Transfer to Maintenance Sales Order**.
5. LN changes the call status from **In Process** to **Transferred**.
6. To create the maintenance sales orders, you can use any of the following lines:
   - **Part Maintenance**
   - **Part Delivery**
   - **Part Receipt**
   - **Part Loan**

To transfer a call to Subcontractor

To transfer a call to Subcontractor, take the following steps:

1. Register the call in Call (tsclm1100m000) session.

2. Check if the call must be transferred to subcontractor. If the item is covered by a subcontract agreement, LN displays the subcontract agreement information when you register the call.
3. To transfer a call to a subcontractor, in the Call (tsclm1100m000) session, on the Specific menu, click **Subcontractor**. When you transfer the call to the subcontractor, LN prompts you to identify the media through which the information must be passed to the subcontractor.
4. If you transfer a call to a subcontractor, LN changes the call status from **In Process** to **Transferred**.

Depending on the status specified in the subcontract agreement, you can decide to transfer the call to the subcontractor.

Solve the call

To solve the call, you can provide the actual problem identified, the actual solution determined, and actual activity required. Based on the time spent to solve the call, and based on whether the company invoices the customer, the total costs and sales incurred on the call is determined.

The process to solve a call consists of the following steps:

1. Register the call in the Call (tsclm1100m000) session. The call-taker tries to identify the problem and the required solution through questions and answers from the customer. You can use the Diagnostic Tree (tsclm3120m000) session to construct, maintain, and use diagnostic trees to solve calls.
2. Solve the call. If the call is solved through help desk, the support engineer can set the call status to Solved. In the Call (tsclm1100m000) session, on the Specific menu, click **Solve** to solve a call.
3. If the support engineer is unable to solve the call, you can reassign the call to another support engineer or support department. To reassign multiple calls, use the Reassign Calls between Support Departments (tsclm1215m000) session and the Reassign Calls between Support Engineers (tsclm1220m000) session.
4. Record the time spent on the call. To record the time spent, you can either set the timer or enter the time manually. If the support engineer keeps the call in waiting, LN updates the used time. When the support engineer solves the call and stops the timer, the spent time is updated.
5. LN updates the Call History (tsclm8520m000) session.

If the customer accepts the solution the support engineer provides, you must change the call status from **Solved** to **Accepted**.

Call invoicing

You can use Invoicing to invoice the business partner for the service calls that you handle.

Invoicing parameters

Before you invoice a call, you must first set the invoicing parameters in the Call Parameters (tsclm0100m000) session:

- **Invoice after Call**
  Select this check box to enable call invoicing.
- **Time Interval**
  When a call is logged, the person who handles the call must determine the invoice interval for the customer. If the sold-to business partner has signed a contract, the invoice interval is taken from the service contract (help desk) terms. If the sold-to business partner did not sign a contract, the invoice interval of the call center, which you define here, is used.

  The time interval for invoicing is used to check if the time spent on the call is invoiceable or not based on the invoice interval limits.

  Start the Invoicing Intervals (tsclm0170m000) session to define a time interval. The main characteristics of the time interval are the lower and upper limits, which are used to determine whether the time spent on a call is invoiced. If the time spent is less than the lower limit, no invoice is created. Otherwise, the actual amount of time spent is invoiced, with the upper limit as maximum.
- **Cost Component**
  The default cost component that is used to invoice a call, and which can also be used to influence the level of contract or warranty coverage. Run the Cost Components (tcmcs0148m000) session to select or define the appropriate cost component.
- **Coverage Type**
  The value in this field indicates to what extent work is covered under warranty, and what part of the activities can be charged. To select the appropriate coverage type, start the Coverage Types (tsmdm0135m000) session.
- **Path for Labor Rate**
  Specify up to three levels for the search path used to retrieve the labor rate:
  - **Installation Group**
  - **Support Engineer**
  - **Activity Taken**
  - **Serialized Item Group**
  - **Support Department**

Invoicing a call

The call invoicing procedure includes these steps:

1. Select the call in the Invoice Calls (tsclm1519m000) session.
2. On the appropriate menu, click **Call to be Invoiced**. The Call Invoicing (tsclm1105s000) session starts, in which you can view the call invoicing details.
3. In the Call Invoicing (tsclm1105s000) session, on the appropriate menu, click **Print Draft Invoice** to print a draft invoice, which you can check.

4. In the Call Invoicing (tsclm1105s000) session, on the appropriate menu, click **Call to be Invoiced** to transfer the call invoicing details to Invoicing.
5. For details about the invoicing procedure, refer to Using Invoicing.

Chapter 5
Call Diagnostics

5

Call diagnostics

An important function in the Call Management (CLM) module is the Call diagnostics.

If you register a call, you can enter the problem and the item details. You can then initiate the diagnostic tree specific to the equipment. You can select a potential problem and solution with the help of a diagnostic tree.

To view the diagnostic tree, in the Call (tsclm1100m000) session, on the Specific menu, click **Diagnostic Tree**. LN determines which diagnostic tree must be used based on the item or serial number.

Before you open the diagnostic tree, you must set up the structure.

Constructing a diagnostic tree

To construct a diagnostic tree, take the following steps:

Step 1:

Define questions and answers

In the Call Management module, you can maintain lists of questions in the Questions (tsclm3100m000) session, and you can maintain lists of answers in the Answers (tsclm3105m000) session. The questions and answers can be based on previous resolutions of calls.

Step 2:

Select a start question

In the Diagnostic Tree (tsclm3120m000) session, in the **Question** field, select a start question from the Questions (tsclm3100m000) session.

Step 3:

Define possible answers

You can use the details session to select possible answers (from the Answers (tsclm3105m000) session) for the start question.

Step 4:

Define the outcome for a possible answer

For each answer listed, you can define:

- A possible problem: Select the problem from the Problems (tsclm3130m000) session.
- A possible solution: Select a solution from the Solutions (tsclm3135m000) session.
- A follow-up question: Select a question from the Questions (tsclm3100m000) session.
- The item to which the related answer refers: Select the item from the Items - Service (tsmdm2100m000) session.

Step 5:

Define problem and solution by each serialized item group

- You can use the Problems by Serialized Item Group (tsclm3131m000) session to view and maintain problems by serialized item group.
- You can use the Solutions by Serialized Item Group (tsclm3136m000) session to view and maintain solutions by serialized item group.

Step 6:

Probability Analysis - Problems and Solutions

In the Probability Analysis - Problems and Solutions (tsclm3161m000) session, you can determine the probability of the selected solution to solve the problem. If the probability of selected solution is low, you can select another combination from the Probability Analysis - Problems and Solutions (tsclm3161m000) session with a high probability. The call will be updated with values you select.

Step 7:

Statistics- Problems and Solutions

When a call is solved or a service order activity is completed, data in the Statistics - Problems and Solutions (tsclm3160m000) session is updated.

Step 8:

Service Resolution - Probability Analysis

The Service Resolution - Probability Analysis (tsclm3150m000) session is updated when:

- A call is solved and the relevant details are added.
- A service order activity is created, either from a call or manually. This history data is updated when you update the activity.

Appendix A
Glossary

A

appropriate menu

Commands are distributed across the **Views**, **References**, and **Actions** menus, or displayed as buttons. In previous LN and Web UI releases, these commands are located in the *Specific* menu.

as-built structure

The actually built structure of a product including the serial numbers.

bad fix

A call from the same customer about a previously solved problem regarding the same item.

bill of material (BOM)

A list of all parts, raw materials, and subassemblies that go into a manufactured item and show the quantity of each of the parts required to make the item. The BOM shows the single-level product structure of a manufactured item.

cost component

A cost component is a user-defined category for the classification of costs.

Cost components have the following functions:

- To break down an item's standard cost, sales price, or valuation price.
- To create a comparison between the estimated production order costs and the actual production order costs.
- To calculate production variances.
- To view the distribution of your costs over the various cost components in the Cost Accounting module.

Cost components can be of the following cost types:

- **Operation Costs**
- **Material Costs**
- **Surcharge**
- **General Costs**
- **Not Applicable**

Note
If you use Assembly Control (ASC), you cannot use cost components of the **General Costs** type.

installation group

A set of serialized items that have the same location and are owned by the same business partner. Grouping serialized items into an installation group enables you to maintain them collectively.

item

A standard maintenance item.

item breakdown

A standard item's list of constituent components. The item breakdown can be displayed as a multilevel structure or as a single-level structure, and can be used as input for a physical breakdown.

maintenance sales order

Orders that are used to plan, carry out, and control the maintenance on customer-owned components, products and the logistic handling of spare parts.

PBOM

See: *production BOM (p. 37)*

physical breakdown

A serialized item's composition and structure, defined by the parent-child relationships of its constituent items. The physical breakdown can be displayed in a multilevel structure or a single-level structure.

production bill of material

See: *production BOM (p. 37)*

production BOM

A general, multilevel list of all parts, materials that go into a manufactured product and show the quantity of each of the parts required to make the item.

Note

To use production bills of material, the **Sites**, **Standard Cost by Enterprise Unit** and **Job Shop by Site** parameters must have either the **In Preparation** or **Active** status in the Implemented Software Components (tccom0100s000) session.

Synonym: production bill of material

Acronym: PBOM

response time

A response time defines, from the time a call is registered, the period of time within which: The service provider must react to the call; A solution to the call's problem must be started; A solution to the call's problem must be finished.

serialized item

An item that is uniquely identified by the item code (manufacturer part number) in combination with the serial number.

service-item data

Information about the service item.

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